



TEXAS INSTRUMENTS
INCORPORATED

P. O. BOX 66027

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HOUSTON, TEXAS 77006

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TEXAS INSTRUMENTS

INCORPORATED

DIGITAL SYSTEMS DIVISION

P. O. BOX 1444 • HOUSTON, TEXAS 77001 • (713) 494-5115

THANK YOU FOR YOUR INQUIRY.....

Enclosed is the material you requested at the Spring Joint Computer Conference. We appreciate your visiting the TI booth and your interest.

For your reference, the Digital Systems Division of Texas Instruments manufactures systems and equipment to solve problems in other applications including:

- ☐ Automated components and systems testing
- ☐ Scientific and industrial stripchart recording
- ☐ Precision pressure instruments, systems and testing
- ☐ Geophysical digital field systems and data processing

Should you desire data on these other capabilities of Texas Instruments, or require additional information or applications assistance regarding the enclosed systems and products, please indicate it on the attached mailing card.

NAME _____ TITLE _____

FIRM _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

I need additional data on _____

☐ HAVE A SALES ENGINEER CALL. MY PHONE NUMBER IS _____

☐ RUSH DATA. I HAVE AN APPLICATION PLANNED WITHIN

- ☐ 30 days
- ☐ 6 mos.
- ☐ 1 year

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DIGITAL SYSTEMS DIVISION

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SILENT 700*

electronic data terminals



TERMS OF LEASE

- (1) Terminals may be leased in any quantity without restriction to number of terminals per installation location. The quoted lease rate includes prime shift maintenance service with no additional charge for travel time and expense within 25 miles from the nearest TI Service Center.
- (2) Charge will be made for travel time and expense at TI then current service rates beyond 25 miles from the nearest TI Service Center.
- (3) The customer agrees to accept billing for service expense for service calls resulting from other than a TI equipment failure or other TI fault.
- (4) 12 months minimum lease contract is required.
- (5) Cancellation terms; the full 12 months lease rate is payable with no refund upon cancellation within the first 12 months.
- (6) Contract extensions are permitted in 30-day increments with 90 days minimum cancellation notice required.
- (7) A purchase option is offered. If exercised within the first 180 days of the lease contract, 60% of the total payments made may be credited to the purchase price. After the first 180 days, 40% of the total payments made may be credited, not to exceed 80% of the sale list price for the terminal.
- (8) Installation service is not expected to be necessary. Extended service coverage beyond the prime shift service included in the standard lease rate may be provided by TI Service Centers at standard TI service rates.
- (9) Model 780's will be leased only when used with TI Data Terminals.

TERMS OF SALE

- (1) Minimum lead time required for alteration of the model mix or alteration of option selection on an order will be 90 days.
- (2) Minimum lead time for modification of the delivery schedule on a given item will be 90 days.
- (3) On quantity orders, the entire quantity must be released for shipment within 12 months and shipped within 15 months after the date of initial release. If shipment of the total quantity is not accepted within that period, TI will invoice the customer for an amount necessary to establish the price for the number of units shipped at the appropriate quantity price level, per TI established quantity prices in effect at the end of the delivery period.
- (4) On multiple release orders, an initial firm release of 10 percent or more of the total quantity is required at the time the order is established.
- (5) Prices and discounts on all orders are firm for a period not exceeding 12 months after the date of initial delivery, and not exceeding 15 months after the date of the initial purchase order.
- (6) The original quantity can be increased after initial shipment to obtain a higher discount provided:
 - (a) The new total quantity is shipped within the original 12-month period and the original expiration date is not extended.
 - (b) That the additional discount applies only to the unshipped balance of the new total quantity and there is no rebate made on the quantity already shipped.

SERVICE

Contract service within 25 miles of a TI Service Center will be provided at the rate of \$30.00 per month on any Silent 700 Model for prime shift service. Contracts for service beyond 25 miles of a TI Service Center will include additional charges for travel at the rate of 10 cents per mile plus \$25 per hour for travel time. Service on Model 780 Paper Tape Reader and Punch will be provided at \$17.00 per month in conjunction with service on a Silent 700 Terminal and \$29.00 per month otherwise. Premium shift service will be quoted on request.

WARRANTY

The following is in lieu of all warranties, express or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose and of any other obligation on the part of supplier.

Supplier, except as otherwise hereinafter provided, warrants goods of its own manufacture or (other than expendable items including without limitation rubber parts) assembled by supplier, against faulty workmanship or the use of defective materials for a period set forth in the schedule below. Supplier warrants that at the time of delivery Supplier has title to the goods free and clear of any and all liens and encumbrances. This warranty is the only warranty made by Supplier and can be amended only by a written instrument signed by an officer of the Supplier.

Supplier's warranty shall be for the following periods from date of shipment to the original buyer unless otherwise stated.

1. DATA TERMINAL

A) Parts—Parts for repair or replacement (at Supplier's option) of any defective component of products manufactured or assembled by Supplier, free of charge for one year from date of shipment. Excluded are expendable items such as paper, rubber parts, lamps, and fuses.

B) Labor and Transportation—Labor (during Supplier's standard working hours of 8:00 A.M. to 5:00 P.M. Monday through Friday, excluding holidays), transportation and subsistence, for repair or replacement of any defective component of a product manufactured or assembled by Supplier, free of charge within a 25-mile radius of a Digital Systems Division Service Center for a period of 90 days after shipment. Beyond the 25-mile radius, Buyer will be charged for travel time, transportation or subsistence at Standard Service Rates of Supplier. During overtime hours, week-ends and holidays, all labor will be at the Standard Service Overtime Rates of Supplier.

NOTE: The printhead assembly is excluded from warranty if paper other than that meeting the requirements of Texas Instruments specification no. 213714 is used in the above data terminal, unless such paper is tested and approved in writing by Texas Instruments for use in the above data terminal.

2. PAPER TAPE READER AND PUNCH

A) Parts—Parts for repair or replacement (at Supplier's option) of any defective component of products manufactured or assembled by Supplier, free of charge for 90 days from date of shipment. Excluded are expendable items such as paper tape, rubber parts, lamps and fuses.

B) Labor and Transportation—Labor (during Supplier's standard working hours of 8:00 A.M. to 5:00 P.M. Monday through Friday, excluding holidays), transportation and subsistence, for repair or replacement of any defective component of a product manufactured or assembled by Supplier, free of charge within a 25-mile radius of a Digital Systems Division office of Supplier for a period of 90 days after shipment. Beyond the 25-mile radius, Buyer will be charged for travel time, transportation or subsistence at Standard Service Rates of Supplier. During overtime hours, week-ends and holidays, all labor will be at the Standard Service Overtime Rates of Supplier.

Technical advice—Supplier's warranty as hereinabove set forth shall not be enlarged, waived, diminished or affected by, and no obligation or liability shall arise or grow out of Supplier's rendering of technical advice or service in connection with the above products.

LEASE CANCELLATION TERMS

MINIMUM OF 90 DAYS NOTICE REQUIRED FOR CANCELLATION.

IF CANCELLED DURING:	CANCELLATION CHARGE IS:
A. 1st year of contract	The 1-year lease rate times 12 less amount previously paid
B. 2nd year of 2- or 3-year contract	The 12-month rate times number of months equipment leased, plus two months, less amount previously paid
C. 3rd year of 3-year contract	The 24-month rate times number of months equipment leased, plus two months, less amount previously paid

silent 700*

electronic data terminals

PRICE LIST

OPTIONS

MODEL	BASIC PRICE LEASE/MONTH	UPPER/LOWER CASE	ANSWER- BACK MEMORY	300 WPM	100 CHAR. BUFFER
710	\$3750.00 170.00	\$190.00 9.00		\$25.00 5.00	\$375.00 15.00
715	3020.00 160.00	190.00 9.00		25.00 5.00	
720	3000.00 160.00	170.00 6.00	\$170.00 10.00		
721	2480.00 135.00	170.00 6.00			
722	2165.00 120.00	170.00 6.00			
723	2565.00 140.00	170.00 6.00			
725	3300.00 170.00	170.00 6.00	170.00 10.00		
730	3080.00 160.00	170.00 6.00	170.00 10.00	Note: Polar Keying on Model 30 available at no charge	
731	2405.00 135.00	170.00 6.00			
780 PTR&P	1490.00 115.00*	Model 780 Accessory Cable, 50 ft. \$147.00/5.00			

Printer Paper \$5.00 Per 300 Ft. Roll (Qty. 1-99)
#213714 \$4.75 Per 300 Ft. Roll (Qty. 100 or More)

Portable Carrying Case \$75.00

Shipping Case with casters \$250.00

*Paper Tape Reader and Punch leased only with a data terminal

	MODEL			
BUILT-IN DATA SET	710	715	720	721
DS100TL/DS100TH	\$375.00 15.00	\$375.00 15.00	\$375.00 15.00	
DS100RL/DS100RH				\$285.00 15.00
DS201	375.00 15.00	375.00 15.00		
DS203		375.00 15.00		



TEXAS INSTRUMENTS
INCORPORATED



* Trademark of Texas Instruments Incorporated

LEASE DISCOUNTS

- A. Standard 12 Month Lease
- B. 24 Month Lease
- C. 36 Month Lease
- D. Quantity 5 Units or More on One Contract for One Installation Location (Including Model 780 PTR&P)
- E. Combination of Above
- F. Discounts Do Not Apply to Model 780 PTR&P

Full Base Rate

Base Rate Less 5%

Base Rate Less 10%

Base Rate Less 15%

Base Rate Less 25% Maximum

NOTE: Texas Instruments reserves the right to make price changes at any time as required in supplying the best product possible.

SALES AND SERVICE OFFICES

SALES

Western Region

85 Town and Country Village
Orange, California 92668
(714) 547-9221

5005 W. Century Boulevard
Inglewood, California 90301
(213) 673-0845

2680 Bayshore Frontage Road
Suite 410
Mountain View, California 94040
(415) 961-2697

Central Region

5901 N. Cicero
Chicago, Illinois 60646
(312) 777-7600

P.O. Box 66027
Houston, Texas 77006
(713) 494-5115
(713) 526-1411

23811 Chagrin Blvd.
Suite 100
Cleveland, Ohio 44122
(216) 464-1192

Eastern Region

480 Neponset Street
Canton, Massachusetts 02021
(617) 828-5024

P.O. Box 798
301 Central Avenue
Clark, New Jersey 07065
(201) 382-9800

720 Montgomery Avenue
P.O. Box 527
Narberth, Pennsylvania 19072
(215) 667-4390

Benjamin Fox Pavilion
Suite 424
Jenkintown, Pennsylvania 19046
(215) 885-3454

Eastern Region (Continued)

1875 Connecticut Avenue N.W.
Washington, D.C. 20009
(202) 234-9320

INTERNATIONAL

Canada

Instronics Techno-Products Ltd.
11 Spruce Street
Stittsville, Ontario, Canada
(613) 836-4411

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Dallas Road
Bedford, England 54649
(0234) 58701

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Texas Instruments France
Boite Postale 5
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(93) 31 03 64

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Texas Instruments Deutschland GmbH
Haggertystrasse 1
805 FREISING,
Germany

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Texas Instruments Incorporated
2535 Camel Back Road
Phoenix, Arizona 85022
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Texas Instruments Incorporated
85 Town and Country Village
Orange, California 92668
(714) 547-6721

5005 W. Century Blvd.
Suite 101
Inglewood, California 90301
(213) 673-0845

Illinois

Texas Instruments Incorporated
2420 East Oakton Road
Arlington Heights
Illinois 60005
(312) 593-7670

Massachusetts

Texas Instruments Incorporated
480 Neponset Street
Canton, Massachusetts 02021
(617) 828-5024

Minnesota

Texas Instruments Incorporated
7615 Metro Boulevard
Minneapolis, Minnesota 55424
(612) 941-3166

New Jersey

Texas Instruments Incorporated
301 Central Avenue
P.O. Box 798
Clark, New Jersey 07065
(201) 382-9800

Ohio

Texas Instruments Incorporated
23811 Chagrin Boulevard
Cleveland, Ohio 44122
(216) 464-1981

SERVICE

Texas

Texas Instruments Incorporated
13500 N. Central Expressway
South Building
Dallas, Texas 75222
(214) 238-3881

Texas Instruments Incorporated
12203 Southwest Freeway
P.O. Box 66027
Houston, Texas 77006
(713) 494-5115

Virginia (Washington, D.C.)

Texas Instruments Incorporated
Suite 500
8712 Leesburg Pike
McLean, Virginia 22101
(703) 893-5550

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Germany

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Haggertystrasse 1
805 FREISING,
Germany

MARKETING ANNOUNCEMENT

NO: 013

DATE: 6/1/71

"Silent 700"* Electronic Data Terminals

NEW TERMINAL LEASE RATES AND TERMS EFFECTIVE JUNE 1, 1971

The following revisions to standard prices and terms of lease are effective June 1, 1971.

<u>STANDARD MODEL</u>	<u>12 MONTH RENTAL</u>	<u>FIRM 12 MONTH LEASE</u>	<u>24 MONTH LEASE</u>	<u>36 MONTH LEASE</u>
710	\$140.00	\$130.00	\$125.00	\$120.00
715	\$125.00	\$115.00	\$110.00	\$105.00
720	\$120.00	\$110.00	\$105.00	\$100.00
723	\$125.00	\$115.00	\$110.00	\$105.00
725	\$150.00	\$140.00	\$135.00	\$130.00
730	\$125.00	\$115.00	\$110.00	\$105.00

- NOTES: 1. Model 780 remains unchanged.
2. Receive-Only Models will be leased on special quote only.
3. Options will be leased at present list rate with no discount.

The following amendments apply to our standard lease terms.

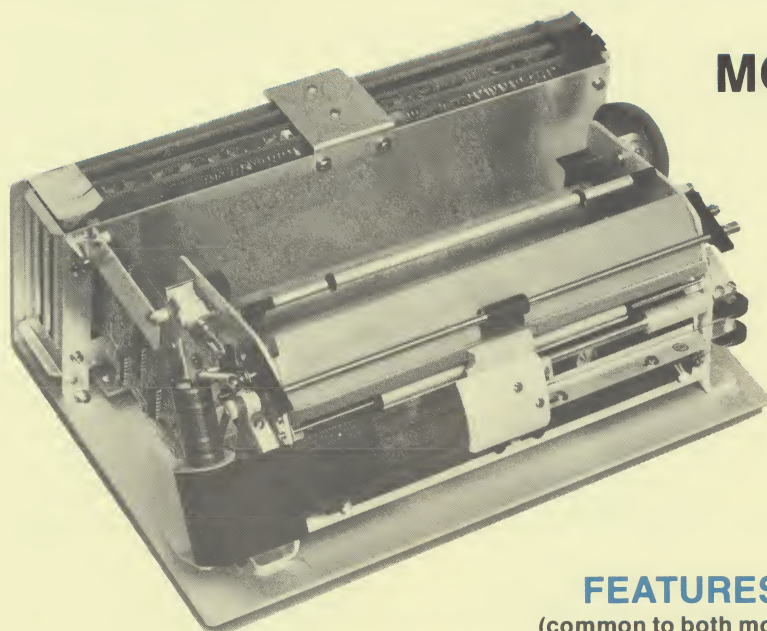
- Paragraph 4:
 - The 12 month rental contract is cancellable with 30 days notice after the first 60 days of rental (minimum 90 days rental).
 - The 12 month lease contract is firm for 12 months.
- Paragraph 6: Extensions permitted with 30 days cancellation notice.
- Paragraph 8: A \$65.00 charge to cover the TI expense of installation or relocation will apply to each unit leased or rented except Model 725.
- Charges for modification or relocation of terminals after installation will be at DSD Standard Service Rates.
- TI Equipment may not be modified or relocated without written approval by TI except for the Model 725 Portable Terminal used on the customer's company business.
- A lease contract may be converted to a new longer term lease within six months with credit on the previous difference paid above the new rate.
- Existing cancellation terms apply to the 12, 24 and 36 month leases.



TEXAS INSTRUMENTS
INCORPORATED

DIGITAL SYSTEMS DIVISION
P. O. BOX 66027 HOUSTON, TEXAS 77006

* TEXAS INSTRUMENTS TRADEMARK



MODELS 750, 751

The Models 750 and 751 electronic printers provide the ideal building-block modules for original equipment manufacturers' custom peripherals or communication system printers.

FEATURES

(common to both models)

Quiet Operation—TI's unique solid-state printhead eliminates the undesirable noise associated with impact printing, permitting virtually silent operation.

Integrated Circuit Reliability—TI makes maximum use of solid-state MOS/LSI electronics to minimize moving parts and assure reliable long-life operation.

Rapid, Silent Printing—Data is received and printed at selectable speeds up to 30 characters per second. Silent, smooth electronic printing is achieved through the TI monolithic silicon printhead—an integrated circuit matrix of 35 elements which instantly create the characters on thermographic paper.

Compact-Small Size—The Silent 700 Models 750 and 751 each weigh less than 10 lbs and consume less than one square foot of space giving maximum packaging flexibility.

DESCRIPTION (Model 750)

The Model 750 data terminal is a receive only, parallel-bit input, alphanumeric, electronic printer. A modified 7-level USASCII code is employed. It prints up to 30 characters per second in an 80-column line length, each character instantly created by the integrated circuit printing matrix.

APPLICATIONS (Model 750)

- Remote order entry and acknowledgement
- Credit card validator
- Gas station transaction printout
- Cash register printout
- CRT printout
- Airline reservation printout
- Hospital nurse-station printer
- Any application requiring "read only" on-line reporting—in conjunction with control computer.

DESCRIPTION (Model 751)

The Model 751 data terminal is a receive only, serial bit input, alphanumeric, electronic printer. A modified 5-level Baudot CCITT Communications code is employed. It receives and prints at three selectable speeds of 10 cps (75 baud), 15 cps (111 baud), and 30 cps (222 baud). Characters are printed in a 50-column line length by the integrated circuit printing matrix (80-column line length optional).

Printer input signal lines are compatible with a Teletype neutral or polar DC loop interface. Electronics are functionally packaged on three printed circuit cards, interconnected to a main frame to permit easy maintenance.

APPLICATIONS (Model 751)

- Low-speed Teletype lines (75, 111, and 222 baud)
- Telex readout
- Newswire services
- International communications

Models 750, 751 specifications

Printer:

- A. Friction-feed platen
- B. Line length — 8 inches (80 characters)
- C. 10 characters/in.
- D. 6 lines/in.
- E. Enclosure contains space for printing paper
— 3%-in. diameter roll
- F. Character font — standard models print characters from 5 x 7 matrix printhead, 0.105 in. x 0.080 in. Upper and lower case alphabetic characters printed as upper and lower case.

Printing paper:

"SILENT 700" printing paper.

Paper out indication:

Last 10 ft. of TI thermographic printing paper roll is color coded.

Physical:

- A. Power requirements
 - 120/240 Volts — ac $\pm 10\%$
 - 50/60 Hz, 100 watts while printing
- B. Ambient temperature
 - Operating, 15° to 45°C
 - Storage, -40° to 70°C, not including paper

C. Shock

- Operating, 0 g
- Storage and handling, 10 g

D. Vibration — 10 to 60 Hz, 0.1 g

E. Humidity

- Operating, 10% to 90%
- Storage, 10% to 90%

F. Weight — 10 lbs. max. excluding paper roll

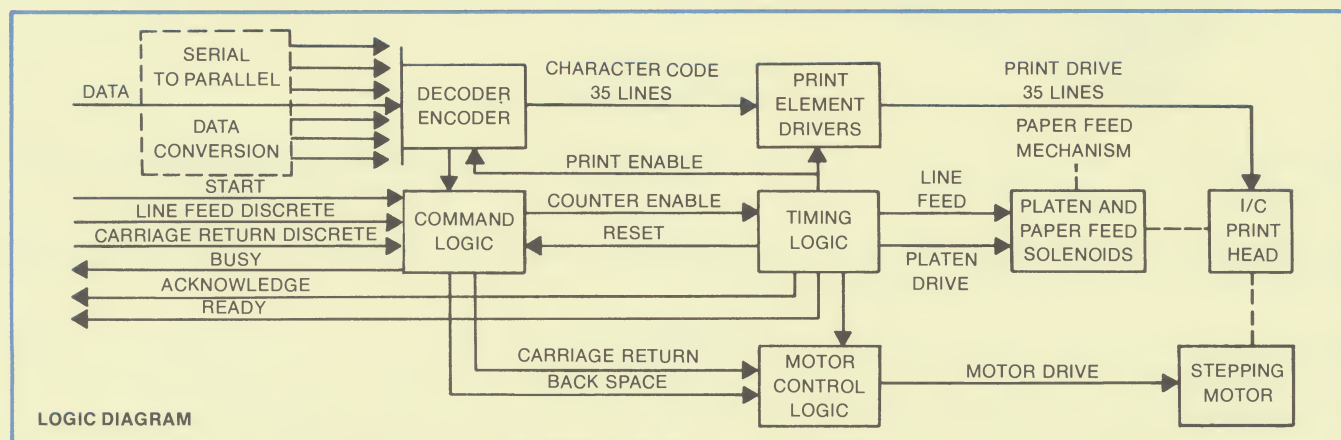
G. Dimensions

9.50 in. D x 5.00 in. H x 14.50 in. W

Interface:

- Connectors — AMP No. 582140-2 or equivalent
- Input Signal — TTL compatible
- Power

Voltage	+5.0Vdc	+14.0Vdc	-14.0Vdc	+38.0Vdc
Max. Peak Current (amp)	1.8	.100	.100	4.0
Avg. Oper. Current (amp)	1.7	.100	.100	2.0
Standby Current (amp)	1.7	.100	.100	0.9
Regulation (%)	± 2	± 2	± 2	± 10
Allowable Ripple (p-p)	40 mv	40 mv	40 mv	1.0 v



DESCRIPTION

TI provides a power supply for the Models 750 and 751 electronic printers as an option for original equipment manufacturers. The power supply provides all necessary voltages required by the printers. It offers minimum maintenance (MTTR of 30 min.) and high reliability (MTBF of 4000 hours). The power supply module includes the mounting frame, plug-in regulator PC card, power components, printer mating plug, and mating provisions to the power line and local function controls.

SPECIFICATIONS

Power Input: 120V $\pm 10\%$, 50 or 60 Hz, 180 W max.

Environmental

Ambient Temperature: Operating 0 to 45°C
Storage -40 to 70°C

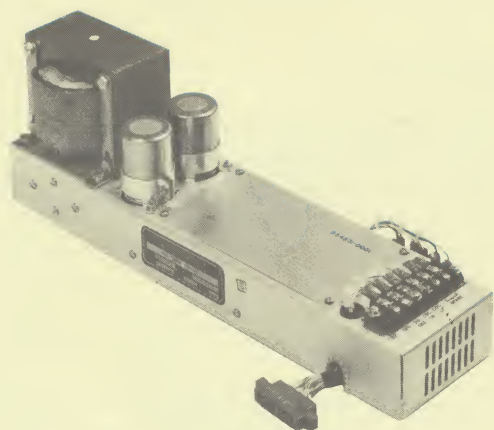
Shock/Vibration: Operating 0 g
Shipping 10 g
Vib. 10-60 Hz -0.5 g

Humidity: 10 to 90% operating or storage

Physical

Dimensions: 14.125 in. W x 5.0 in. H x 4.17 in. D

Weight: 20 lbs max.



Modular Power Supply (Optional)

Inquiries for ordering or for more information — contact your nearest TI representative or call collect to Marketing Department, Houston (713) 494-5115, Extension 2165.



TEXAS INSTRUMENTS

INCORPORATED

DIGITAL SYSTEMS DIVISION

P. O. BOX 1444 HOUSTON, TEXAS 77001

TI-322-5M-571
Printed in U.S.A.

Texas Instruments model 725 portable data terminal



silent 700*

ELECTRONIC DATA TERMINAL

The *Model 725* portable data terminal unfolds new dimensions in mobility, convenience and speed to time-sharing users. It is equipped with a built-in acoustic coupler and it is attractively packaged in a luggage type carrying case.

The *Model 725* allows rapid access to a remote computer anywhere a telephone and a standard electrical outlet are available.

Applications include:

- Remote order entry and acknowledgement
- Catalog search, indexing and updating
- Insurance program planning
- Management information systems access
- Inventory reporting and control
- And any other interrogation of a computerized data base from remote locations

Engineered with the user in mind, the self-contained data terminal provides switch-selectable speeds of 10, 15 and 30 characters per second, together with an operator adjustable print contrast control.



Reliability is an outstanding characteristic of the *Model 725*. It is designed using the latest MSI and MOS/LSI electronic circuitry for utmost



dependability. A unique silicon integrated circuit printhead is employed along with a simplified mechanical design that involves a minimum of moving parts.

Silent, smooth, electronic printing is achieved through the transfer of

thermal energy from a 5 x 7 dot matrix to heat-sensitive paper.

The *Model 725* is capable of printing 94 characters (upper and lower case) using the USASCII code. Data transmission is operator selectable between half and full duplex modes.

The integral acoustic coupler is comparable to the Bell System 103 data sets and may be used with standard telephone handsets nationwide.

Features

- **HIGH SPEED**—Permanent records are printed at operator selectable speeds up to 30 characters per second
- **PORTABILITY**—Weighs only 35 pounds
- **QUIET OPERATION**—A solid-state silicon printhead that develops characters on thermal sensitive paper eliminates impact printing and associated noise
- **RELIABILITY**—Modular plug-in circuit cards and a minimum of moving parts delivers extended operating life while decreasing equipment maintenance
- **STREAMLINED DESIGN**—Compact size and the attractive appearance of the Model 725 blends in with modern office decor
- **TELEPHONE COUPLER**—The Model 725 contains a built-in solid state acoustic coupler for communication via a switched telephone network
- **TWO KEY ROLL-OVER**—This feature prevents printing and transmission during the interval when more than one key is depressed. The second character will print on release of the first key.

The versatile, efficient Model 725 portable data terminal permits instant access to up-to-date computer information whether across the street or across the country.

Specifications

INPUT

METHOD: Keyboard
CODE: USASCII
CHARACTER SET: 94 printable characters (upper and lower case)
128 generated codes

OUTPUT

METHOD: Thermal page printing, non-impact employing a 5 x 7 dot matrix
CHARACTER SET: 94 printable characters (upper and lower case)
PRINTING FORMAT: 10 characters per inch
80 characters per line
6 lines per inch
PRINTING RATE: 10, 15 and 30 characters per second, operator selectable
RECORDING MEDIUM: 8-1/2 inches wide, 300 feet long, thermographic printing paper

INDICATORS

Power On
On-Line
Local
Break
Carrier Detect

SWITCHES

Power ON/OFF
Speed Selection
Half and Full Duplex
Upper and Lower Case alphabet or Upper Case only (optional)

DATA TRANSMISSION

METHOD: Serial by bit
CODE: USASCII, 7 level, 11 bits per character including parity, start and 2 stop bits at 10 characters per second; 10 bits per character with 1 stop bit at 15 and 30 characters per second

TRANSMISSION RATES:

110, 150 or 300 baud
PARITY: Even parity is generated on transmitted data. No parity checking is provided on received data.
MODE: Half or Full duplex, operator selectable
CARRIAGE RETURN TIME: 195 ms maximum
LINE FEED TIME: 67 ms maximum
COMMUNICATIONS MEDIA: Standard voice grade telephone line
COMPUTER INTERFACE: Integral "originate mode" Acoustic Coupler comparable to Bell System 103 data sets

POWER REQUIREMENTS

VOLTAGE: 120 VAC $\pm 10\%$
FREQUENCY: 50-60 Hz
POWER: 110 watts av. - 240 watts maximum peak

ENVIRONMENTAL

OPERATING: 59° F to 104° F
NON-OPERATING: -40° F to 158° F

PHYSICAL

HEIGHT: 6-1/2"
WIDTH: 21.5"
DEPTH: 19"
WEIGHT: 35 Pounds

Options

ANSWER BACK MEMORY: Provides a 20 character, 8 bits per character memory for station identification. Transmission of programmed characters is actuated locally by depressing the HERE IS key or remotely by the "ENQ" code.

LOWER CASE ALPHABET: A switch mounted on the keyboard allows either upper and lower case printing or upper case printing only. These modes of operation are similar to typewriter and teletypewriter operations, respectively.

AUXILIARY I/O: Bit-parallel transmission can be accepted from auxiliary devices such as a paper tape reader and punch with the use of an interface connector kit.

silent 700

ELECTRONIC DATA TERMINAL

Silent 700 Electronic Data Terminals are available in 9 different models. This brings to users a variety of applications, and the speed and quietness, the reliability and efficiency of the *Silent 700* design.

Keyboard Send/Receive Terminals



Model 710 is operationally comparable to the IBM 1051/1052 inquiry terminal. It operates via polling, addressing or broadcasting by a remote computer and transmission control unit.

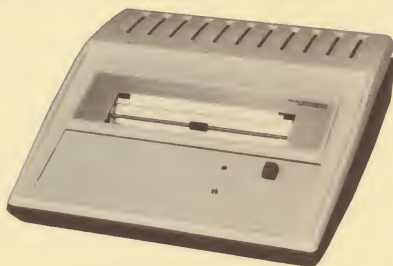
Model 715 is operationally comparable to the IBM 2741 with BCD code and is similar to the *Model 710* except that buffer memory, polling response and auxiliary input/output features are not provided.

Model 720 is a low cost KSR I/O unit with USASCII code for applications previously served only by mechanical KSR terminals. The *Model 720* has the EIA RS232B serial interface; 10, 15 or 30 characters per second speed and full or half duplex operation similar to the *Model 725*.

Model 723 features a parallel-by-bit data interface for hard-wired connections as a computer console terminal or other direct wired applications not requiring a serial data interface.

Model 730 is a low-cost KSR terminal similar to the *Model 720*, having the teletype current loop interface.

Receive-Only Models

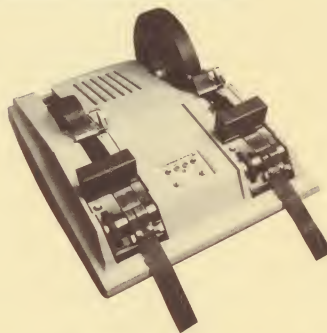


Model 721 is a receive-only configuration of *Model 720* and incorporates the EIA serial data interface for receipt of data transmission over private or public communication lines.

Model 722 is a receive-only configuration of *Model 723* with a parallel-by-bit data interface. It is designed for hard-wire connection to the sources of parallel data output.

Model 731 is a receive-only configuration of *Model 730*. It has the current loop line interface for receipt of data via telegraph-grade lines such as used by wire services and other public and private telecommunication systems.

Model 780 Paper Tape Reader and Punch



Model 780 gives automatic send/receive capability to *Silent 700* data

terminals that accept auxiliary input/output devices, providing economical, low-speed tape reading and punch operations.

Built-In Data Sets

DS100 Data Sets are compatible with Bell 103F data sets. They operate asynchronously up to a maximum speed of 300 baud in a half- or full-duplex mode over a 2- or 4-wire voice-grade private line.

DS201 Data Set is compatible with IBM Limited Distance Line Adapter, Type IIA1. It will operate asynchronously up to a maximum speed of 300 baud in a half-duplex mode over customer-provided communication facilities.

DS203 Data Set is compatible with IBM Limited Distance Line Adapter, Type IB. It provides full-duplex capability for use with "attention" feature in *Model 715* Data Terminal.

Sales and Service Offices of Texas Instruments are located throughout the United States and in major countries overseas as well. Contact the Digital Systems Division, Texas Instruments Incorporated, P. O. Box 1444, Houston, Texas 77001. Or call 713-494-5115, Ext. 2126, for the location of the office nearest you.



Texas Instruments reserves the right to make changes at any time in order to improve design and supply the best product possible.

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SILENT 700^{*} PRINTING PAPER

for Texas Instruments Electronic Data Terminals

- The paper yields a high-contrast, precision, black print which is easy-to-read, and smear resistant.
- Superior reproducibility with electro-static and other common office copiers enhances office usage.
- Minimum Paper abrasiveness—complements the life of the printhead.
- A heat sensitive paper having excellent stability in storage and use.
- This thermographic printing paper is lightweight, crisp, and provides a surface for any color or type of writing.

silent 700 printing paper_____

THIS IS THE ACTUAL PRINT TYPE ON A "SILENT 700" ELECTRONIC
DATA TERMINAL. THE TI MONOLITHIC SILICON PRINthead--AN
INTEGRATED CIRCUIT MATRIX OF 35 ELEMENTS--INSTANTLY
CREATES CHARACTERS ON HEAT SENSITIVE PAPER.
ABCDEFGHIJKLMNOPQRSTUVWXYZ (! " # \$ % & ' () * + , - . / : ;

1234567890

PERFORMANCE FEATURES

PHYSICAL

Standard paper roll—8½ inches wide by 300 ft.
long. End of roll indicator—0.25 inch wide red
line 10 feet from end of roll.

STABILITY

Shelf life of unprinted, unopened paper—retains
90 percent of its original image and sheet bright-
ness for one year when stored at 70°F (50 percent
relative humidity).

STORAGE

Printed paper remains legible for 10 years when
stored in darkness at 70°F (50 percent relative
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SENSITIVITY

High print contrast maintained at all printing
speeds to 30 characters per second.

AVAILABILITY

"Silent 700" thermographic printing paper comes
in white and yellow and two different roll sizes:

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DIGITAL SYSTEMS DIVISION
P. O. BOX 1444 HOUSTON, TEXAS 77001

TI-321-5M-571
Printed in U.S.A.

silent 700 printing paper_____

THIS IS THE ACTUAL PRINT TYPE ON A "SILENT 700" ELECTRONIC
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P. O. BOX 1444 HOUSTON, TEXAS 77001

TI-321-5M-571
Printed in U.S.A.

SILENT 700*

electronic data terminals



Keyboard and receive-only models for: computer timesharing / remote access / telecommunications / hard copy printout with CRT terminals

Auxiliary paper tape reader and punch

Self-contained modems

Both BCD and USASCII code models

*Trademark of Texas Instruments



TEXAS INSTRUMENTS
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Table of Contents

<i>Silent 700</i> Data Terminal Features and General Specifications	1-2
<i>Silent 700</i> Data Terminals with PTT/BCD Code	3-7
Model 710 — IBM compatible inquiry/response terminal with buffer memory and serial data-set interface.	
Model 715 — IBM compatible input/output terminal with serial data-set interface.	
<i>Silent 700</i> Data Terminals with USASCII Code	8-13
Model 720 — Keyboard send/receive terminal with serial data-set interface.	
Model 721 — Receive-only terminal with serial data-set interface.	
Model 722 — Receive-only terminal with bit-parallel data interface.	
Model 723 — Keyboard terminal with bit-parallel data interface.	
Model 730 — Keyboard send/receive terminal with serial dc-signal interface.	
Model 731 — Receive-only terminal with serial dc-signal interface.	
Built-in Data Sets	14
Model 780 Paper Tape Reader and Punch	15-16
Ordering Information	17

This brochure describes Texas Instruments broad line of *Silent 700* Electronic Data Terminals. Included are descriptions of each model, standard features and options, built-in data sets, technical specifications and dimensions. Information contained herein supersedes literature previously published on these products.

***Silent 700* Electronic Data Terminals are Fast and Quiet— Reliable and Efficient...**

Now you can have data terminals with the performance and reliability needed for today's modern information systems. Attractive, quiet and fast, *Silent 700* Electronic Data Terminals provide a new solution to the limitations of mechanical units. In the office, laboratory, hospital, or even in a library, these terminals give a standard of performance not available before.

Features...

Quiet operation

A solid-state printhead that develops characters on thermal-sensitive paper eliminates impact printing, reducing noise to a minimum.

Attractive design

Compact size and attractive appearance make the *Silent 700* terminals compatible with modern office decor.

Rapid printing

Silent 700 terminals print, transmit and receive data at speeds up to 300 words per minute (30 characters per second).

Low maintenance

Modular construction, a minimum of moving parts and plug-in circuit cards transform any component replacement into a quick routine maintenance job.

Integrated circuit reliability

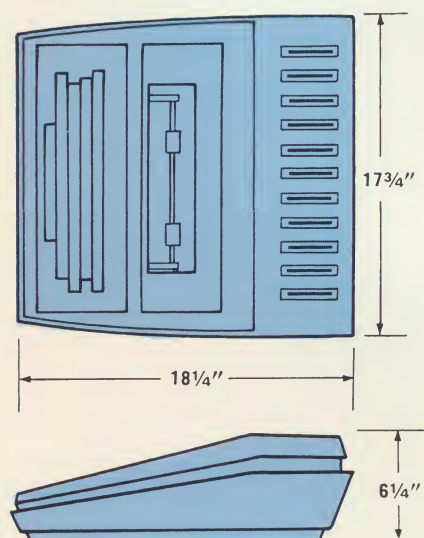
TI integrated circuit electronics and the elimination of major mechanical wear elements assure reliable long-life operation. The most advanced electronics available are incorporated in the design of *Silent 700* terminals, including solid-state keyboard switches and MOS large-scale integrated circuitry (LSI).

System compatibility

Silent 700 terminals offer a choice of models compatible with existing IBM and Teletype mechanical printing terminals.

Operation...

Silent electronic printing is achieved through a transfer of thermal energy to heat sensitive paper. A 5 x 7 dot matrix, composed of 35 solid-state electrically controlled heating elements, is arranged on a monolithic printhead. The printhead moves horizontally along the line, printing 80 characters per 8-inch line. Input data is decoded and voltage is applied to the proper elements, which causes a transfer of heat to the paper and creates the image of the desired character.



General Specifications

1. Printer:

- A. Friction-feed platen
- B. Line length 8 inches (80 characters)
- C. 10 characters/in.
- D. 6 lines/in.
- E. Enclosure contains space for printing paper — 3 5/8-in. diameter roll
- F. Character font — standard models print characters from 5 x 7 matrix printhead, .105 in. x .080 in. Upper and lower case alphabetic characters printed as upper case; graphics printed in upper and lower case. Optional lower-case feature provides lower-case alphabet printing from 5 x 5 matrix, character size .0715 in. x .080 in.

2. Keyboard:

Solid-state electronic keyboard prevents wear by eliminating electrical contacts. "Two-key roll over" electronically prevents transmission when two keys are depressed.

3. Printing paper:

TI thermographic printing paper, No. 213714

4. Paper out indication:

Last 10 ft of TI thermographic printing paper roll is color coded.

5. Physical:

- A. Terminal is self-contained — see dimensions
- B. Power requirements — 120/240 v-ac $\pm$ 10%, 50/60 Hz, 100 watts while printing
- C. Ambient temperature —
Operating, 15° to 40°C
Storage, -40° to 70°C, not including paper
Paper, 0° to 40°C
- D. Shock —
Operating, 0 g
Storage and handling, 10 g
- E. Vibration — 10 to 60 cps, 0.1 g
- F. Humidity —
Operating, 10% to 90%
Storage, 10% to 90%
- G. Weight—32-38 pounds

6. Reliability and maintenance:

- A. Solid-state IC and MOS electronics
- B. Modular construction simplifies maintenance
- C. Minimum moving parts; low wear
- D. Estimated service life, 30,000 hours

Silent 700
Data Terminals
Models 710, 715



- Computer timesharing,
remote-access capabilities
- IBM system compatibility

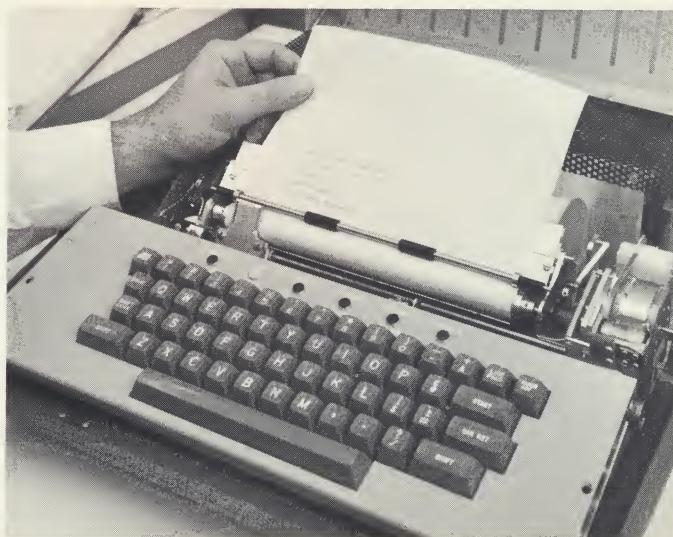
Texas Instruments *Silent 700* Data Terminals, Models 710 and 715, are computer inquiry/response units using PTT/BCD code. Both are designed for the System/360 user, and Model 715 is intended for computer timesharing applications as well.

Model 710

Silent 700 Data Terminal, Model 710, is a self contained electronic page printer with an optional 100-character buffer memory that enables it to greatly improve the efficiency of multidrop terminal systems. Operationally comparable to the IBM 1050 inquiry terminal system, the Model 710 is designed for remote computer inquiry/response and information entry/retrieval. It operates via polling, addressing or broadcasting by a remote computer and transmission control unit.

Model 715

Silent 700 Data Terminal, Model 715, is a complete input/output terminal designed for timesharing and other computer-to-remote terminal applications. Model 715 is comparable to the IBM 2741 terminal and similar to Model 710 except that buffer memory, polling response and auxiliary input/output features are not provided.





Model 710 Standard Features

Polling

Terminal responds to broadcast signal or to switch-selectable station code when polled or addressed by the computer. A switch is provided to activate terminal as "Master Station" in reply to broadcast signal.

Erase

Without buffer, ERASE key transmits delete code. With optional buffer, ERASE key deletes last character entered in buffer, preventing transmission of an error to the computer. Entire buffer message may be erased before transmission by depressing START key.

Automatic EOA and EOB

Data transmitted from optional buffer is automatically preceded by the control character EOA (end of address) signal and followed by EOB (end of block) signal as required by the computer. This eliminates manual entry from keyboard. Without the buffer, the START key causes the terminal to respond to polling by sending an EOA code, and the CARRIAGE RETURN generates the EOB signal.

Auxiliary Input/Output

Terminal accepts data (parallel-by-bit, serial-by-character) via 16-pin connectors from one of several auxiliary input and output devices such as Model 780 Paper Tape Reader and Punch or card reader and punch. Terminal provides decoding for remote control.

Automatic CR/LF

CR (carriage return) and LF (line feed) are automatically activated, but not transmitted or added

to buffer, when the printer reaches the right-hand margin.

Parity Checking

Odd character parity and message parity (Longitudinal Redundancy Check, LRC) are transmitted with data entered from the keyboard and are checked on data received. A parity error in data received is indicated by the data error light and printing of error symbol.

Options

Buffer Memory

Up to 100 characters of input data are stored in an electronic buffer memory prior to transmission, allowing maximum utilization of multidrop private line data circuits. Data is typed into the buffer at manual speeds without tying up the computer line and is released to the computer at programmed speed so that numerous terminals on one line may be interrogated in rapid sequence.

High-Speed Transmission

Serial transmission and printing speed of 30 characters per second may be provided.

Lower Case

Provides lower case alphabetic printing from 5 x 5 portion of 5 x 7 matrix, character size .0715 in. x .080 in.

Built-In Data Sets

Field interchangeable modems (DS100 and DS 201 Data Sets) may be supplied in the form of plug-in printed-circuit cards. (See Data Sets, page 14)



Model 715 Standard Features

Attention (Line Interrupt)

Allows operator to interrupt transmission from computer to terminal when necessary by means of ATTENTION key. Communication is immediately established with the remote computer by transmission of a space signal longer than 140 ms which is interpreted as an "interrupt" or "break". This feature requires full-duplex modem.

Parity Transmission

Odd character parity is transmitted but no parity checking and error indication are provided for data received.

Automatic CR/LF

CR (carriage return) and LF (line feed) are automatically activated but not transmitted when the printer reaches the right-hand margin.



Options

High-Speed Transmission

Serial transmission and printing speed of 30 characters per second may be provided.

Lower Case

Provides lower case alphabetic printing from 5 x 5 matrix, character size .0715 in. x .080 in.

Built-In Data Sets

Field interchangeable modems (DS100, DS201, and DS203) may be supplied in the form of plug-in printed-circuit cards. (See Data Sets, page 14)



Silent 700 Data Terminals Models 710, 715



NORMAL					SHIFTED				
8 4 2 1	BA 00	BA 01	BA 10	BA 11	BA 00	BA 01	BA 10	BA 11	
0 0 0 0	(SPACE)	@	—	&	(SPACE)	¢	—	+	
0 0 0 1	1	/	J	A	=	?	J	A	
0 0 1 0	2	S	K	B	≡	S	K	B	
0 0 1 1	3	T	L	C	:	T	L	C	
0 1 0 0	4	U	M	D	:	U	M	D	
0 1 0 1	5	V	N	E	%	V	N	E	
0 1 1 0	6	W	O	F	' (Apost.)	W	O	F	
0 1 1 1	7	X	P	G	"	X	P	G	
1 0 0 0	8	Y	Q	H	*	Y	Q	H	
1 0 0 1	9	Z	R	I	(	Z	R	I	
1 0 1 0	0				)				
1 0 1 1	#	,	\$	.	±	,	!	.	
1 1 0 0									
1 1 0 1		LF	NL			LF	NL		
1 1 1 0	UC	EOB	BS	LC	UC	EOB	BS	LC	
1 1 1 1	EOT		IDLE	(DEL) ✕	EOT		IDLE	(DEL) ✕	

Non-Print Characters

PTT/BCD 6-level Code System



Model 710 Keyboard Layout



Model 715 Keyboard Layout

Equipment Specifications

1. Standard Equipment

Complete I/O terminal with keyboard, printer, control electronics and data-set interface for transmission over public or private communication lines.

2. Computer Interface

IBM Series 2700 Transmission Control Units or equivalent.

3. Data Set Interface

EIA Standard RS232B. A 5-ft data-set cable with 25-pin male connector is supplied with terminal.

4. Auxiliary Device Interface

TTL logic voltage level for parallel data I/O:
Logic "1" range:
+2.6 v-dc to +5 v-dc, not to exceed +5 v-dc.
Logic "0" range:
+0.5 v-dc to 0 v-dc, not to exceed +0.5 v-dc.
Auxiliary device connection is by 16-pin edge connector at rear of terminal.

5. Operating Speed

Serial input printing, transmission and receiving at 14.8 cps.

Auxiliary parallel input printing at up to 30 cps (300 wpm).

6. Keyboard and Transmission Code

PTT/BCD, 6-level, 55 keys, 86 printable characters.

7. Data Format

Half-duplex; asynchronous serial-by-bit, serial-by-character; auxiliary I/O parallel-by-bit, serial-by-character.

Half-duplex; asynchronous serial-by-bit, serial-by-character.

8. Transmission Control

Terminal will respond to polling, addressing or broadcasting. Keyboard operator may also initiate transaction.

Keyboard operator must initiate transaction.

Silent 700 Data Terminals Models 710, 715



MODEL 10

MODEL 15

9. Function Characters

- A. Control:
(EOT) End of transaction (C)
(EOA) End of address (D)
(EOB) End of block (B)
Positive acknowledge (Y) or (D)
Negative acknowledge (N)
- B. Station identification: any one of the alphabet character codes (changed by switches).
- C. Group addressing: none.
- D. Broadcast addressing: all stations on one line may be simultaneously addressed by sending the character (/).
- E. Component select:
0 — keyboard or external input on
1 — printer
2 — auxiliary output
5 — keyboard
6 — auxiliary input
9 — printer and external output

- Control:
(EOT) End of transmission (C)
(EOA) End of address (D)

10. Condition Indicators

A. Power On

- B. **Terminal Alarm:** indicates loss of data-set ready signal or abnormal terminal logic condition.

- C. **Line Busy:** indicates CPU is on line; entered data will be sent to CPU on next polling.
- D. **Data Error:** indicates parity error or LRC error.
- E. **Input Proceed:** indicates data can be entered into buffer memory for transmission or that computer is ready to receive data.

- C. **Transmit mode light:** indicates terminal is in transmit mode.
- D. **Receive mode light:** indicates terminal is in receive mode.
- E. **Local mode light:** indicates terminal can be used as a typewriter.

11. Operator Controls

- A. **Power On-Off switch.**
- B. **Paper Advance** key: activates continuous paper feed at rate of 30 lines/sec; operator activated only.
- C. **Line Feed** key: advances paper one line and transmits LF character. LF requires one character time.
- D. **Backspace** key: backspaces printhead and generates BS character.

- E. **Erase** key: deletes last character from buffer and prints error signal.
- F. **Start** key: resets terminal, clears buffer and control for data entry.
- G. **Carriage Return** key: activates CR/LF and sets logic to transmit the EOB Code and LRC character. If buffer is present, sets logic to transmit buffer message on next polling signal. Full CR/LF time is 195 ms max.
- H. **Line Clear** key: generates EOT code which is used on some applications to indicate transaction complete and clear the line.

- E. **Carriage Return** key: activates CR/LF, generates EOT code and places terminal in local mode. Full CR/LF time is 195 ms max.
- F. **On-Line** key: an alternate-action key — when depressed, enables keyboard, places terminal in "transmit" mode and generates EOA code; when key is next depressed, it places terminal in "local" mode and keyboard input is printed but not transmitted.

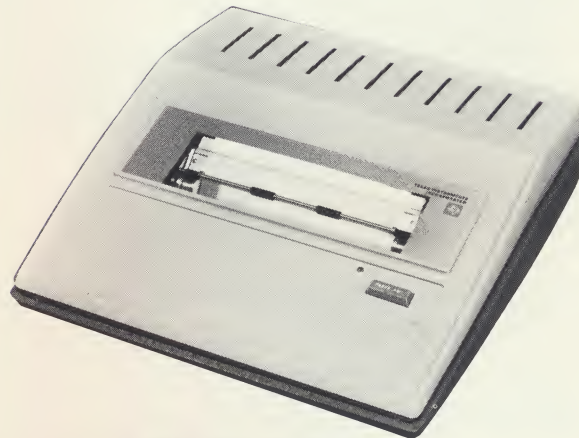


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DIGITAL SYSTEMS DIVISION

P.O. BOX 1444 HOUSTON, TEXAS 77001

Silent 700
Data Terminals
Models 720 through 731



Texas Instruments *Silent 700* Data Terminals, Models 720, 721, 722, 723, 730 and 731 are keyboard send/receive or receive-only terminals compatible with existing teletypewriter terminals. All use USASCII Code.

Model 720

Silent 700 Data Terminal, Model 720, is a low-cost KSR (keyboard send/receive), I/O unit that brings the advantages of speed, quietness and reliability to applications previously served by mechanical KSR terminals. Choice of speeds and options give flexibility in areas such as: timesharing, telecommunications, remote access and computer console use.

Model 721

Silent 700 Data Terminal, Model 721, is a receive-only configuration of Model 720 and incorporates the EIA serial data interface for receipt of data transmission over private communications lines. It provides faster, quieter printing in areas where mechanical teleprinters are being used, such as wire services and public and private telecommunications systems.

Model 722

Silent 700 Data Terminal, Model 722, is a receive-only configuration of Model 720 with a parallel-by-bit data interface. It may be used as a hard-copy printer with video data terminals, desk-top computers and calculators, or with another remote data terminal — anywhere there is a need for quietness, printing speed and attractiveness. Model 722 is designed for hard-wire connection to the sources of

parallel data output and is similar in appearance and operation to Model 721.

Model 723

Silent 700 Data Terminal, Model 723, is a keyboard terminal with parallel-by-bit data interface for hard-wired connection as a computer console terminal or other direct wired applications not requiring a serial data interface.

Model 730

Silent 700 Data Terminal, Model 730, is a low-cost KSR (keyboard send/receive) unit similar to Model 720 but designed for telegraph-grade d-c signal data transmission. It has special application in areas using low-speed mechanical teletypewriters, such as private and public telecommunication systems, remote terminals and computer consoles. Model 730 is provided with a Teletype interface circuit for direct compatibility with existing terminals.

Model 731

Silent 700 Data Terminal, Model 731, is a receive-only configuration of Model 730. It has a d-c signal interface for receipt of telegraph-grade data from wire services and other public and private telecommunications systems. Model 731 may also be used as a hard-copy printer for desk-top computers, calculators and computer terminal applications.



Model 720 Standard Features

Choice of Speed

Operating speeds of 10, 15 or 30 characters per second (110, 150 or 300 baud) are provided by selector switch for the flexibility of high-speed transmission or compatibility with slower terminals.

Half/Full-Duplex Operation and Auxiliary Input/Output

The standard Model 720 operates either half- or full-duplex by switch selection, providing flexibility for transmission via dial-up or dedicated line. Full-duplex isolates keyboard from the printer except in "local" mode.

Terminal accepts data in bit-parallel form from auxiliary devices such as paper tape reader and punch or card reader and punch. TI Model 780 Auxiliary Paper Tape Reader and Punch adds ASR (automatic send/receive) capability to Model 720. Decoding for remote device control codes is included in Model 720 electronics.

Break (Line Interrupt)

Allows operator to interrupt transmission from computer to terminal when necessary by means of BREAK key. Communication is immediately established with the remote computer by transmission of a space signal longer than 140 ms which is interpreted as an "interrupt" or "break". This feature requires full-duplex modem.

Parity Generation

Even parity is generated with data entered from keyboard. Through an internal reconnection, parity transmissions can be overridden by causing logic one to be continuously transmitted in the parity bit. Parity is not checked on received data.

Options

Built-In Data Set

A field-interchangeable modem (DS100 Data Set) may be supplied in the form of a plug-in printed-circuit card. (See Data Sets, page 14)

Answer-Back Memory

Provides a 20-character, 8-bits-per-character memory. Readout is serial-by-bit and serial-by-character, activated remotely or locally. Readout speed is that of the terminal transmission rate. Message is not printed or transmitted to auxiliary data device.

Lower Case

Provides lower case alphabetic printing from 5 x 5 portion of 5 x 7 matrix, character size .0715 in. x .080 in.

Model 721 Standard Features

Choice of Speed

Operating speeds of 10, 15 or 30 characters per second (110, 150 or 300 baud) are provided by selector switch for the flexibility of high-speed transmission or compatibility with slower terminals.

Options

Built-In Data Set

A field-interchangeable modem (DS100 Data Set) may be supplied in the form of a plug-in printed-circuit card. (See Data Sets, page 14)

Lower Case

Provides lower case alphabetic printing from 5 x 5 portion of 5 x 7 matrix, character size .0715 in. x .080 in.





Model 722 Standard Features

High Speed

Terminal prints at transmission rate of data source, up to 30 characters per second maximum.

Options

Lower Case

Provides lower case alphabetic printing from 5 x 5 portion of 5 x 7 matrix, character size .0715 in. x .080 in.

Model 723 Standard Features

High Speed

Terminal receives, prints and generates data asynchronously at speeds up to 30 characters per second maximum. Speed is determined by strobing rate of controlling source.

Options

Lower Case

Provides lower case alphabetic printing from 5 x 5 portion of 5 x 7 matrix, character size .0715 in. x .080 in.



Model 730 Standard Features

Teletype Compatible

A d c -signal serial transmission speed of 10 characters per second (110 baud) is provided for compatibility with existing teletypewriters and telegraph-grade communication lines. Higher speeds of 15 or 30 characters per second are provided by selector switch for use where required.

Half/Full-Duplex Operation and Auxiliary Input/Output

Half- or full-duplex operation is provided for application flexibility. Full-duplex isolates keyboard from the printer except in "local" mode. An internal switch provides choice of half- or full-duplex with the appropriate interface connection.

Terminal accepts data in bit-parallel form from auxiliary devices such as paper tape reader and punch or card reader and punch. TI Model 780 Auxiliary Paper Tape Reader and Punch adds ASR (automatic send/receive) capability to Model 730. Decoding for remote device control codes is included in Model 730 electronics.

Break (Line Interrupt)

Allows operator to interrupt transmission from computer to terminal by means of BREAK key. Communication is immediately established with remote computer by transmission of a space signal longer than 140 ms. This is the same procedure as Model 720, but no modem is used. In full-duplex operation, the "break" signal will be transmitted on the separate "send" loop while data is being received on "receive" loop. For half-duplex, the "break" signal will break the receipt of data from transmitting source and transmitting unit will sense interrupt condition.

Parity Generation

Even parity is generated with data entered from keyboard. Through an internal reconnection, parity transmission can be overridden by causing logic one to be continuously transmitted in the parity bit. Parity is not checked on received data.

Neutral Keying

Standard Model 730 interface provides for neutral keying only.

Options

Polar Keying

Capability of polar-signal keying is available.

Silent 700 Data Terminals Models 720 through 731



Answer-Back Memory

Provides a 20-character, 8-bits-per-character memory. Readout is serial-by-bit and serial-by-character, activated remotely or locally. Readout speed is that of the terminal transmission rate. Message is not printed or transmitted to auxiliary data device.

Lower Case

Provides lower case alphabetic printing from 5 x 5 portion of 5 x 7 matrix, character size .0715 in. x .080 in.

Model 731 Standard Features

Teletype Compatible

A dc -signal serial transmission speed of 10 characters per second (110 baud) is provided for compatibility with existing teletypewriters and telegraph-grade communication lines. Higher speeds of 15 or 30 characters per second are provided by selector switch for use where required.

Neutral or Polar Keying

Model 731 accepts data in either neutral- or polar-signal keying.

Options

Lower Case

Provides lower case alphabetic printing from 5 x 5 portion of 5 x 7 matrix, character size .0715 in. x .080 in.



Models 720, 723 and 730 Keyboard Layout

Note: Repeat, Break, Here-Is and On-Line/Local keys not applicable on Model 723.

Bits				Column											
D ₇	D ₆	D ₅	D ₄	D ₃	D ₂	D ₁	D ₀	0 ₀	0 ₀ 1	0 ₁ 0	0 ₁ 1	1 ₀ 0	1 ₀ 1	1 ₁ 0	1 ₁ 1
b ₇	b ₆	b ₅	b ₄	b ₃	b ₂	b ₁	b ₀	0	1	2	3	4	5	6	7
0	0	0	0	0	0	0	0	NUL	DLE	SP	0	@	P	`	p
0	0	0	1	1	1	1	1	SOH	DC1	!	1	A	Q	a	q
0	0	1	0	2	2	2	2	STX	DC2	"	2	B	R	b	r
0	0	1	1	3	3	3	3	ETX	DC3	#	3	C	S	c	s
0	1	0	0	4	4	4	4	EOT	DC4	\$	4	D	T	d	t
0	1	0	1	5	5	5	5	ENQ	NAK	%	5	E	U	e	u
0	1	1	0	6	6	6	6	ACK	SYN	&	6	F	V	f	v
0	1	1	1	7	7	7	7	BEL	ETB	'	7	G	W	g	w
1	0	0	0	8	8	8	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	9	9	9	HT	EM	)	9	I	Y	i	y
1	0	1	0	10	10	10	10	LF	SUB	*	:	J	Z	j	z
1	0	1	1	11	11	11	11	VT	ESC	+	;	K	[	k	(
1	1	0	0	12	12	12	12	FF	FS	,	<	L	\	l	;
1	1	0	1	13	13	13	13	CR	GS	-	=	M	]	m	}
1	1	1	0	14	14	14	14	SO	RS	.	>	N	↑	n	~
1	1	1	1	15	15	15	15	SI	US	/	?	O	←	o	(DEL)

Non-Print Characters

Non-Print Characters

* USASCII Code System

*Note back- and up-arrows differ from USASCII by substitution for **Underline** and **^** characters. Control characters FS, GS, RS and US are generated by depressing the CTRL key and the comma, M, period and / keys, respectively. (As generated on teletype terminals by depressing control & shift, and L,M,N,O keys respectively.)

Silent 700

Data Terminals

Models 720 through 731



Detailed Specifications for USASCII KSR Models

	MODEL 720	MODEL 730	MODEL 723
1. Keyboard and Transmission Code	USASCII, 7-level, 11 bits per character including parity, start and 2 stop bits at 10 characters/sec speed; 10 bits per character with 1 stop bit at higher speeds. 94 printable characters, plus 4 printer control characters and 5 terminal control characters.	USASCII, 7-level, 11 bits per character including parity, start and 2 stop bits at 10 characters/sec speed; 10 bits per character with 1 stop bit at higher speeds. 94 printable characters, plus 4 printer control characters and 5 terminal control characters.	USASCII, 7-level parallel input/output; 94 printable characters, plus 4 printable control characters.
2. Data Format	Half- or full-duplex; asynchronous serial-by-bit, serial-by-character. Auxiliary I/O parallel-by-bit, serial-by-character.		Asynchronous parallel-by-bit, serial-by-character. An accompanying strobe line signifies the validity of the data lines. Speed is controlled by the strobe rate from the controlling source.
3. Serial Data Interface	Data set interface per EIA Standard RS232B. A 5-ft data set cable with 25-pin male connector is supplied with terminal.	Teletype interface, Type I: Input currents — Polar, 5 ma to 60 ma Neutral, 20 ma to 60 ma Input switching currents — Polar, 5 ma Neutral, 10 ma or 30 ma Output current capability — 60 ma Output voltage capability — 130 v-dc 10-foot connector cable with spade lugs is provided. For full-duplex, signal interface requires four screw terminals, two for input and two for output loop connections. For half-duplex, appropriate jumpers will be installed.	Not applicable.
4. Parallel Data	TTL logic voltage level for parallel data I/O: Logic "1" range: +2.6 v-dc to +5 v-dc, not to exceed +5 v-dc. Logic "0" range: +0.5 v-dc to 0 v-dc, not to exceed +0.5 v-dc. Auxiliary device connection is by two 16-pin edge connectors at rear of terminal.		TTL logic voltage level for parallel data I/O: Logic "1" range: +2.6 v-dc to ± 5 v-dc, not to exceed +5 v-dc. Logic "0" range: +0.5 v-dc to 0 v-dc, not to exceed +0.5 v-dc. Data source connection is by 16-pin edge connection at rear of terminal.
5. Condition Indicators	A. "Power On" light B. "Local" mode C. "On-Line" mode D. "Break"		A. "Power On" light
6. Operator Controls	A. Depressing Repeat Key will cause continuous repeat printing and transmission of any depressed character key. B. Depressing Paper Advance causes continuous feed of paper at 30 lines/sec. C. Depressing Line Feed advances paper one line and transmits LF character. LF time is one character time. May be remotely activated. D. Delete Key transmits delete character. E. Here-Is Key triggers readout and transmission of answerback memory message. F. Carriage Return returns printhead to left-hand margin and transmits CR character. Max time for full return is 195 ms. The LF function can be performed during this time. G. On-Line Key is an alternate action key which causes keyboard input to be transmitted and received data to be printed when depressed once. When depressed again, places terminal in "Local" mode in which keyboard is printed but not transmitted.		A. Depressing Paper Advance causes continuous feed of paper at 30 lines/sec. B. Depressing Line Feed advances paper one line and transmits LF character. LF time is one character time. May be remotely activated. C. Delete Key transmits delete character. D. Carriage Return returns printhead to left-hand margin and transmits CR character. Max time for full return is 195 ms. The LF function can be performed during this time.

Silent 700
Data Terminals
Models 720 through 731



Detailed Specifications for USASCII Receive-Only Models

	MODEL 721	MODEL 731	MODEL 722
1. Transmission Code	USASCII, 7-level, 11 bits per character including parity, start and 2 stop bits at 10 cps speed; 10 bits per character with 1 stop bit at higher speeds; 94 printable characters, plus 4 printer control characters.	USASCII, 7-level, 11 bits per character, including parity, start and 2 stop bits; 94 printable characters, plus 4 printer control characters.	USASCII, 7-level parallel input; 94 printable characters plus 4 printer control characters.
2. Data Interface	Data-set interface per EIA Standard RS232B. A 5-ft data set cable with 25-pin male connector is supplied with terminal.	Teletype interface, type II: Operates in receive-only mode on 2 wires. Input currents — Polar, 5 ma to 60 ma Neutral, 20 ma to 60 ma Input switching currents — Polar, 5 ma Neutral, 10 ma or 30 ma Signal interface is a 10-foot cable terminating in two spade lugs.	TTL logic voltage level for parallel data input: Logic "1" range: +2.6 v-dc to +5 v-dc, not to exceed +5 v-dc Logic "0" range: +0.5 v-dc to 0 v-dc, not to exceed +0.5 v-dc Data source connection is by 16-pin edge connector at rear of terminal.
3. Data Format	Simplex, asynchronous serial-by-bit, serial-by-character.		Simplex, asynchronous parallel-by-bit, serial-by-character. Terminal controlling source must provide required format. Asynchronous operation obtained by requiring that input lines be strobed when ready. Completion of print operation is indicated by "Ready-busy" line.
4. Condition Indicators	Power-On switch and indicator light		
5. Operator Controls	Paper Advance button — when depressed, causes continuous feed of paper at rate of 30 lines/sec.		
6. Parity Checking	No parity check is provided on data received.		
7. Carriage Return and Line-Feed	Maximum time for full carriage return is 195 ms. Line-feed time is one character time and may be performed during carriage return.		
8. Description	Same enclosure, dimensions, approximate weight and environmental specifications as keyboard models. A coverplate is provided in the enclosure keyboard opening.		





Built-In Data Sets

Data Sets are totally contained within the terminal enclosure, adding flexibility and reducing the expense and space required for conventional data sets.

TI's **DS100 Data Sets** are compatible with Bell Data Set 103F2. They operate asynchronously up to a maximum speed of 300 baud in a half- or full-duplex mode over a 2- or 4-wire voice-grade private line.

Typical terminal applications use the "Originate" mode; however, both "Originate" and "Answer" modes are provided in send-receive models for compatibility with the Bell 103F2 or equivalent modems. Receive-only models are also available in each mode for use with Model 721 receive-only terminal at minimum customer cost.

Model	Mode	Transmit Frequencies	Receive Frequencies
DS100TL	Originate	1070 Space 1270 Mark	2025 Space 2225 Mark
DS100TH	Answer	2025 Space 2225 Mark	1070 Space 1270 Mark
DS100RL	Originate		2025 Space 2225 Mark
DS100RH	Answer		1070 Space 1270 Mark

Modulation:	frequency shift keying
Transmitter output level:	0-15 dbm, adjustable
Receiver input level:	operational between + 5 dbm and - 35 dbm
Input and output line impedances:	600/900 ohms
Transmit-control function:	request-to-send/clear-to-send delay, 265 $\pm$ 65 ms
Receive-control function:	carrier detect time — operate, 150 ms $\pm$ 50 ms release, 50 ms $\pm$ 25 ms
Type facility:	3002 line (no conditioning)

DS201 Data Set is compatible with IBM Limited Distance Line Adapter, Type 11A1. It will operate asynchronously up to a maximum speed of 300 baud in a half-duplex mode over customer-provided communication facilities.

Modulation:	frequency shift keying
Type facility:	2-wire
Maximum range:	8.25 miles
Carrier frequencies:	1000 Hz — mark 2200 Hz — space
Input impedance:	600/ 8200 ohms
Output impedance:	600/ 8200 ohms

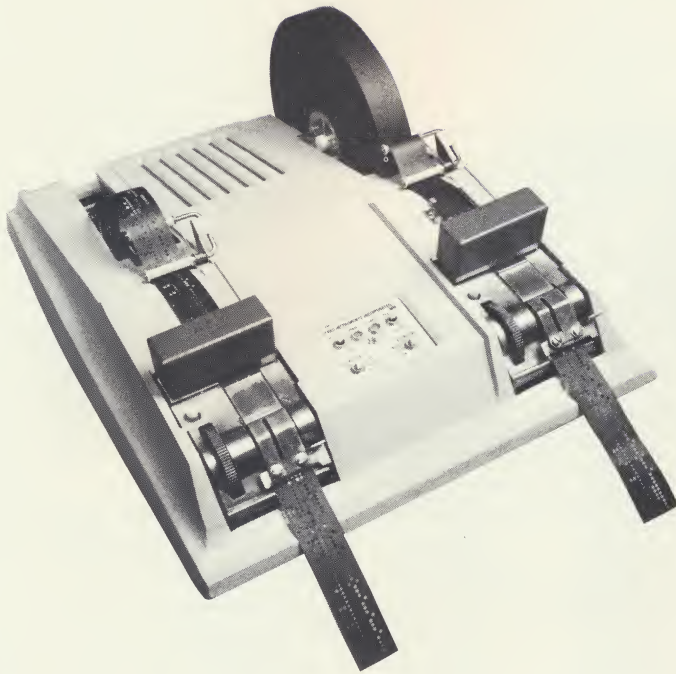
DS203 Data Set is compatible with IBM Limited Distance Line Adapter, Type 1B. It provides full-duplex capability for use with "attention" feature in Model 715 Data Terminal.

Modulation:	frequency shift keying
Type facility:	4-wire
Maximum range:	4.75 miles
Carrier frequencies:	1170 Hz — mark 1830 Hz — space
Input impedance:	600/3000 ohms
Output impedance:	600/5000 ohms
Speed:	300 baud max

Note: When plug-in Data Set is used, terminal interface is changed from EIA modem interface to a 10-foot connector cable with 2 or 4 spade lugs for connection to direct access arrangements.



Model 780 Paper Tape Reader and Punch



- Compatible with **Silent 700** and other data terminals
- Manual or remote operation

Model 780 Paper Tape Reader and Punch gives automatic send/receive capability to all *Silent 700* Data Terminals that accept auxiliary input/output devices. It is compatible with other data terminals as well, providing economical, low-speed tape reading and punch operations.

The compact and attractive design of Model 780 complements the appearance of *Silent 700* terminals. It may be located adjacent to a terminal or remotely. The punch and reader operate as separate functions but share the same enclosure, power supply and central control electronics.

Model 780

Standard Features

Automatic Control

Punch and reader may be operated manually or may be remotely operated by the receipt of device control signals through the terminal. Model 780 has asynchronous, full-duplex capability.

Easy Loading

Tape is loaded into reader or punch by raising tape clamp, threading tape onto sprocket and reclosing clamp. Thumbwheels are provided to advance or retract the tape.

Tape-Reel Wells

Wells for 8-inch diameter tape rolls are provided for both punch and reader.

Chad Drawer

Chad drawer inside the unit enclosure can be bypassed if desired.

Integrated Circuits

Model 780 has TTL integrated circuit electronics for added reliability.

Tape Editing

"Read-One" control is available to operator for editing. "Delete" or "Regenerate" modes can be established using the *Silent 700* Data Terminal.

Feed

A feed control is provided to produce punched leader.

Connector Cable

A 5-ft cable with appropriate connectors is provided for connection to *Silent 700* Data Terminal.

Options

Accessory Cable

A 50-ft cable with connectors is available for connection of Model 780 to *Silent 700* terminals.

Model 780 Paper Tape Reader and Punch



Model 780 Specifications

1. Operator Controls:

- A. **Power on/off** is located at rear of unit on power supply module.
- B. Reader and punch controls — 3-position switches for both reader and punch are provided for "off", "automatic" and "manual". "Automatic" position, required for remote operation, is normally used. "Manual" position is spring-loaded to return to "Automatic" and is only used to generate the momentary pulse needed to start operation.
- C. **Feed—Read One** is 3-position switch for operator selection of—
 - 1. "Feed" — punches sprocket holes only and advances tape through punch unit; repeats until spring-loaded switch is released to center position.
 - 2. "Read One" — used to advance tape one character in reader for tape editing. Switch is momentary contact, spring-loaded to center position.
- D. **Regenerate-Tape duplication** can be accomplished when used with the *Silent 700* Data Terminal or with any external controller designed to gate the reader data lines to the punch.
- E. Thumbwheels are used to manually advance or retract tape in reader or punch when control switches are in "off" position and tape clamps are closed.

2. Indicators:

- "Power-On" — lighted when power is applied.
- "Chad Clear" — lighted when the chad chute to the chad drawer is clear. When this light goes off, chad drawer should be emptied.

3. Speed:

30 characters per second max; operation is asynchronous, allowing the punch and reader to operate at any character rate up to 30 cps.

4. Optical Reader:

Reads all tapes specified as suitable for optical reading, including prefolded tape.

5. Tape Requirements:

Standard 1-in. 8-channel paper or mylar tape designated for optical reading.

Type recommended, black paper, oiled
Width, $1.000 \pm .003$ in.

Thickness, .003 to .0045 in.

Reel, 8.0 in. max outside diameter; $2.0 \pm .05$ in. inside diameter of core

Tape leader, 5 in. min

6. Tape Drive:

Unidirectional

7. Tape Punching and Reading Standards:

U.S.A. Standard X3.18 — 1967; 1-in. perforated tape for information interchange, as applicable to 8-channel tape.

8. Parallel Signal Interface:

Two 16-contact printed circuit board connections at rear; electrical interface is Series 74 TTL compatible and designed for interface with *Silent 700* Data Terminal Models 710, 720 and 730 and with Models 721 and 731 as a punch only.

9. Environmental:

- A. Ambient temperature — 15° to 40°C , operating
 -40° to 70°C , storage
- B. Vibration — 10 to 60 Hz, 0.1 g
- C. Shock — 0 g, operating
10 g, storage and handling
- D. Humidity, excluding tape — 10% to 90%, operating and storage.

10. Weight:

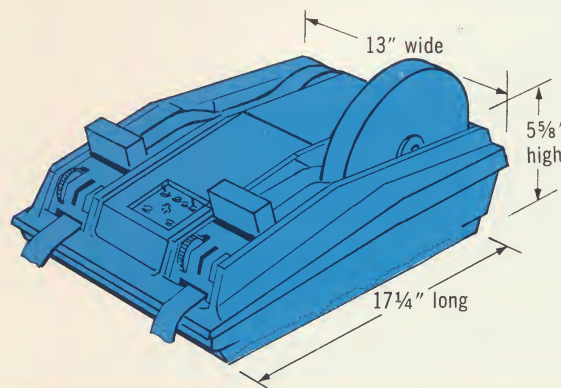
30 lbs

11. Construction:

Reader and Punch are individually removable, modular units that share a single electronics and power supply module. All electronic components are contained on a single P.C. card. All elements are designed for easy repairability and high reliability.

12. Power Requirements:

120/240 v-ac, 50/60 Hz $\pm 10\%$, 250 watts max

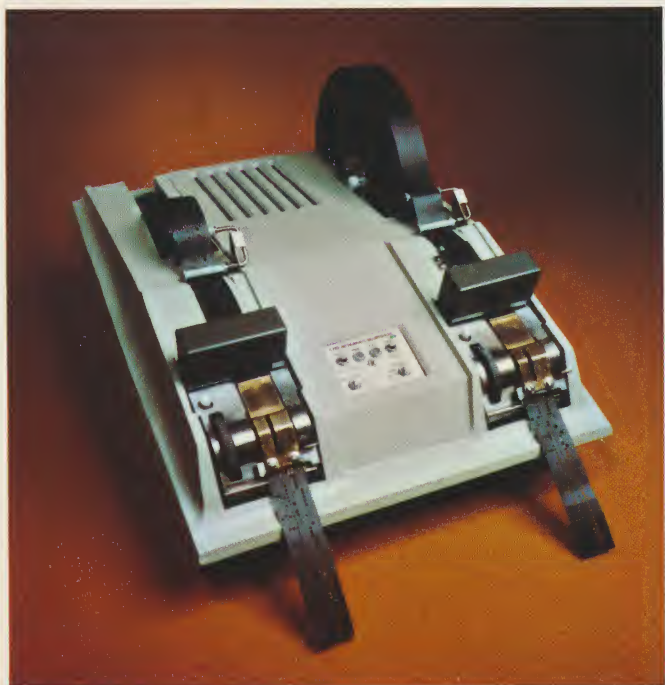


Silent 700 Data Terminals Ordering Information

1. To order, select desired model in basic unit and specify options, including appropriate data set model.
2. Order Model 780 Paper Tape Reader and Punch and specify optional 50-ft connector cable, if desired.
3. Order TI Thermographic Printing Paper No. 213714 in desired quantity of rolls or cases.

Silent 700 MODEL NUMBER — BASIC TERMINAL	OPTIONS								
	UPPER-LOWER CASE ALPHABET	ANSWERBACK MEMORY	300 WPM SERIAL DATA SPEED	AUXILIARY INPUT / OUTPUT	100 CHARACTER BUFFER MEMORY	POLAR SIGNAL KEYING	DS100 DATA SET	DS201 DATA SET	DS203 DATA SET
Models with PTT/BCD code									
Model 710 — IBM compatible I/O terminal with station addressing and serial data-set interface	X		X	X	X		DS100TL DS100TH	X	
Model 715 — IBM compatible I/O terminal with serial data-set interface	X		X				DS100TL DS100TH	X	X
Models with USASCII code									
Model 720 — Keyboard terminal with serial data-set interface	X	X	A	X			DS100TL DS100TH		
Model 721 — Receive-only terminal with serial data-set interface	X		A				DS100RL DS100RH		
Model 722 — Receive-only terminal with bit-parallel data interface	X		B						
Model 723 — Keyboard terminal with bit- parallel data interface.	X		B						
Model 730 — Keyboard terminal with serial dc-signal interface	X	X	A	X		X			
Model 731 — Receive-only terminal with serial dc-signal interface	X								

Notes: A. Standard on basic models
B. Up to 300 wpm standard on parallel input



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